IN THE CLAIMS

1. (Currently amended) A ~~network device assembly employed in a communication~~ system comprising:

a technical support center;

a packet switching network coupled to the technical support center by a first interface line;

network devices coupled to the packet switching network by a second interface line, the network devices capable of communicating network information to the technical support center through the packet switching network, each of the network devices including at least one hardware subsystem, at least one software subsystem, and embeddded software operable to collect and analyze status information from the at least one hardware subsystem and the at least one software subsystem to detect a problem with any one of the hardware and software subsystems or the second interface line, the status information including error messages from any one of the hardware and software subsystems, each of the network devices capable of sending, in response to the detection of the problem, a first message to the technical center without interrupting the normal operation of the network device, the first message including the status information.

~~a plurality of network devices capable of communicating network information, through a packet switching network, to a technical support center said plurality of network devices coupled to said packet switching network through an interface line, each of the plurality of network devices including one or more hardware subsystems and one or more software subsystems and for monitoring the status of the hardware and software subsystems included therein and when a problem occurs either with respect to one or more of the hardware and software subsystems of a particular one of the plurality of the network devices or with respect to said interface line, the particular network device sends a first message to the technical support center notifying the technical support center of the problem without interruption to the operation of the network device, said network device assembly including a computer register for indicating the status of all of the hardware and software subsystems after a fault occurs and before device failure.~~

2. (Currently amended) ~~A network device assembly as recited in claim 1~~ The system of claim 1, wherein the ~~interface line is~~ packet switching network comprises the ~~an~~ Internet ~~line~~ and the first message ~~is in the form of~~ comprises an email message.

3. (Currently amended) ~~A network device assembly as recited in claim 1~~ The system of claim 1, wherein the first message ~~is in the form of~~ comprises a fax transmission.

4. (Currently amended) ~~A network device assembly as recited in claim 1~~ The system of claim 1, wherein the first message ~~is in the form of~~ comprises a page.

5-7. (Cancelled)

8. (Currently amended) ~~A network device assembly as recited in claim 1~~ The system of claim 1, wherein the ~~computer register includes~~ error messages ~~for identifying a particular hardware or software subsystem failure~~ identify a particular failure for the any one of the hardware and software subsystems.

9. (Currently amended) ~~A network device assembly as recited in claim 1 wherein each of the plurality of network devices includes~~ The system of claim 1, wherein the embedded software comprises:

~~a remote diagnostic embedded process subsystem,~~

a hardware health status monitor ~~subsystem and~~ subsystem;

a software health status monitor subsystem; and

a ~~software health status monitor subsystem, the~~ remote diagnostic embedded process subsystem for communicating with the hardware health status monitor subsystem and the software health status monitor ~~subsystem and~~ subsystem, for collecting status information provided by the software health status monitor subsystem and the hardware health status monitor ~~subsystem~~ subsystem, and for detecting problems encountered by the hardware and software subsystems.

10. (Currently amended) ~~A network device assembly as recited in claim 1~~ The system of claim 1, wherein the ~~plurality of~~ network devices ~~is~~ are responsive to a second message generated by the technical support center for requesting further information regarding the problem.

11. (Currently amended) ~~A network device assembly as recited in claim 1~~ The system of claim 1, wherein at least one of the ~~plurality of~~ network devices ~~is~~ comprises an access server.

12. (Currently amended) A network device ~~for use in communication with a technical support center the technical support center being in communication with the network device through a packet switching network,~~ that can be coupled to a packet switching network by an interface line to communicate with a technical support center that is also coupled to the packet switching network, the network device comprising:

~~an interface line coupling said network device to the packet switching network;~~

~~one or more hardware subsystems;~~ a hardware subsystem;

~~one or more software subsystems;~~ a software subsystem; and

means for monitoring the status of the hardware and software subsystems and ~~said interface line~~ the interface line, the network device capable of transmitting a first message to the technical support center while maintaining normal operation, the first message transmitted in response to the monitoring means detecting a problem with one of the hardware subsystem and the software subsystem, the first message transmitted prior to failure of the one of the hardware subsystem and the software subsystem, the first message notifying the technical support center of the problem and indicating the status of the hardware subsystem and the software subsystem. ~~so that when a problem occurs with respect to one or more of the hardware or the software subsystems or the interface line, the network device transmits a first message to the technical support center to notify the technical support center of the problem without interruption to the operation of the network device; and~~

~~a computer register for indicating the status of all of the hardware and software subsystems after a fault occurs and before device failure.~~

13. (Currently amended) ~~A network device as recited in claim 12 wherein the technical support center is able to diagnose the problem without interruption to the operation of the network device.~~ The network device of claim 12, wherein the network device is capable of operation without interruption while the technical support center diagnoses the problem with the one of the hardware subsystem and software subsystem.

14-18. (Cancelled)

19. (Currently amended) ~~A network device as recited in claim 12 including~~ The network device of claim 12, the means for monitoring further comprising:

~~a remote diagnostic embedded process subsystem,~~

a hardware health status monitor ~~subsystem and~~ subsystem;

a software health status monitor ~~subsystem,~~ subsystem; and

~~the~~ a remote diagnostic embedded process subsystem for communicating with the hardware health status monitor subsystem and a software health status monitor ~~subsystem and~~ subsystem, for collecting status information provided by the software health status monitor subsystem and the hardware health status monitor ~~subsystem~~ subsystem, and for detecting problems ~~encountered by~~ with the hardware and software subsystems.

20. (Currently amended) ~~A network device as recited in claim 19 wherein~~ The network device of claim 19, the first message transmitted in response to the remote diagnostic embedded process subsystem ~~detects~~ detecting an error message ~~prior to the transmission of the first message~~ from the one of the hardware subsystem and the software subsystem.

21. (Currently amended) ~~A network device as recited in claim 20 wherein~~ The network device of claim 20, the first message transmitted in response to the remote diagnostic embedded process subsystem ~~detects certain~~ detecting criteria regarding the status of the network device ~~prior to the transmission of the first message~~.

22. (Currently amended) ~~A network device as recited in claim 12~~ The network device of claim 12, the network device capable of sending additional information regarding the problem

to the technical support center in response to receiving a second message from the technical support center, the second message generated by the technical support center in response to the first message. ~~wherein the technical support center generates a second message and sends the same to the network device for requesting further information regarding the problem.~~

23. (Cancelled)

24. (Currently amended) A method ~~for detecting a problem in a network device~~ comprising:

during the operation of a network device that is capable of communicating with a technical support center through a packet switching network, the network device including a hardware subsystem and a software subsystem, the network device coupled to the packet switching network by an interface line, monitoring a status of the hardware and software subsystems and the interface line;

~~during the operation of the network device, the network device communicating network information through a packet switching network to a technical support center the network device being coupled to the packet switching network through an interface line, the network device including one or more hardware subsystems and one or more software subsystems;~~

~~monitoring the status of the hardware and software subsystems and the interface line;~~

during the operation of the network device, detecting a problem associated with one of the hardware subsystem, the software subsystem, and the interface line;

~~detecting the occurrence of a problem associated with one or more of the hardware or software subsystems or the interface line;~~

during the operation of the network device and in response to detecting the problem, sending a first message from the network device to the technical support center, the first message notifying the technical support center of the problem, the first message further indicating the status of the hardware subsystem and the software subsystem, the first message sent without interrupting the operation of the network device; and

during the operation of the network device, using the technical support center to diagnose the problem without interrupting the operation of the network device.

~~sending a first message to the technical support center for notification of the problem and to diagnose the problem without interruption to the operation of the network device; and~~

~~indicating the status of all of the hardware and software subsystems after a fault occurs and before device failure.~~

25. (Currently amended) ~~A computer readable medium having stored therein computer readable program code comprising instructions for performing the following steps:~~

Logic encoded in one or more tangible media for execution and when executed operable to:

monitor a status of a hardware subsystem, a software subsystem, and an interface line during an operation of a network device, the hardware subsystem and software subsystem included in the network device, the network device coupled to a packet switching network through an the interface line, the network device capable of communicating with a during the operation of a network device that is capable of communicating with a technical support center through the packet switching network;

~~during the operation of the network device, the network device communicating network information through a packet switching network to a technical support center, the network device being coupled to the packet switching network through an interface line, the network device including one or more hardware subsystems and one or more software subsystems;~~

~~monitoring the status of the hardware and software subsystems and the interface line;~~

during the operation of the network device, detecting a problem associated with one of the hardware subsystem and the software subsystem;

~~detecting the occurrence of a problem associated with one or more of the hardware or software subsystems or the interface line;~~

sending a first message to the technical support center for notification of the problem and to diagnose the problem without interruption to the operation of the network ~~device;~~ the first message indicating the status of ~~all of~~ the one of the hardware and software subsystems after ~~a fault occurs and before device failure~~ the problem is detected but before failure of the one of the hardware and software subsystems.

26. (Currently amended) ~~A network device assembly as recited in claim 9 wherein said plurality of network devices include memory and the remote diagnostic embedded process subsystem is coupled to~~ The system of claim 9, the embedded software further comprising a memory monitoring subsystem for monitoring ~~the memory of~~ a memory included in the network devices, the memory monitoring subsystem coupled to the remote diagnostic embedded process subsystem.

27. (New) The system of claim 2, the technical support center comprising:

a user interface capable of displaying information communicated from the network devices;

an email server for collecting the email message; and

a command-formatter capable of translating the email message into a format that is understandable to a user at the user interface.

28. (New) The network device of claim 21, the criteria comprising:

a memory capacity of the network device dropping below a first threshold level;

a percentage of eall failures to or from the network device exceeding a second threshold level;

a detection of a software reload by the network device;

a detection of a reduced quality of an interface on the network device;

a temperature of the network device exceeding a third threshold level; and

a detection of a failed interface on the network device.